

# New Hampshire

Department of Agriculture,  
Markets, and Food

Shawn N. Jasper, Commissioner

28

June 30, 2025

Her Excellency, Governor Kelly A. Ayotte  
and the Honorable Council  
State House  
Concord, New Hampshire 03301

## REQUESTED ACTION

Authorize the New Hampshire Department of Agriculture, Markets, and Food, Division of Agricultural Development (DAMF) to enter into a Cooperative Project Agreement with the University System of New Hampshire (Vendor Code #315187) in the amount of \$35,817.94 for the purpose of research and development of integrated disease management of blueberry leaf rust effective upon Governor and Council approval through September 29, 2027. **100% Federal Funds.**

Funding is available in account, Specialty Crop Block Grant II (SCBG), in Fiscal Year 2026 as follows with the authority to adjust encumbrances in each of the State fiscal years within the price limitation through the Budget Office, if needed and justified.

02-18-18-185010-33460000 Specialty Crop State Grant II

072-500574 Grants Federal

FY2026

\$35,817.94

## EXPLANATION

The New Hampshire Department of Agriculture, Markets & Food (DAMF) received SCBG money from the United States Department of Agriculture to fund projects that increase the competitiveness of specialty crops in New Hampshire. The projects were solicited through the RFP process and submitted for review by USDA, Agricultural Marketing Service as part of our state application. The proposal submitted by the University of New Hampshire was one of the projects accepted by USDA for funding as enumerated in the CPA.

University of New Hampshire research will develop an integrated disease management system to blueberry leaf rust based on state-wide survey and disseminating results to stakeholders through grower meetings and field days. Blueberries are an economically important fruit crop in New Hampshire. Blueberry leaf rust, caused by the fungus *Thekopsora minimum*, is an emerging disease in the United States. In the summer and fall of 2023, blueberry leaf rust was found widely spread in New Hampshire. Leaf rust destroys blueberry leaves, reducing photosynthesis, which is necessary for plant growth and development, and causes severe premature defoliation of the affected bushes. The disease could affect winter hardiness of the canes and have a direct impact on yield and reduction in flower bud development for the following year. The results generated from this research will help blueberry growers in NH to make informed decisions in the management of this emerging disease.

In the event that these Federal funds become no longer available, General Funds will not be requested to support this program.

Respectfully submitted,

A handwritten signature in black ink, appearing to read "Shawn N. Jasper". The signature is fluid and cursive, with the first name "Shawn" and last name "Jasper" clearly distinguishable.

Shawn N. Jasper  
Commissioner

**COOPERATIVE PROJECT AGREEMENT**

between the

**STATE OF NEW HAMPSHIRE, Department of Agriculture, Markets, and Food**  
and the

**University of New Hampshire of the UNIVERSITY SYSTEM OF NEW HAMPSHIRE**

- A. This Cooperative Project Agreement (hereinafter "Project Agreement") is entered into by the State of New Hampshire, **Department of Agriculture, Markets, and Food**, (hereinafter "State"), and the University System of New Hampshire, acting through **University of New Hampshire**, (hereinafter "Campus"), for the purpose of undertaking a project of mutual interest. This Cooperative Project shall be carried out under the terms and conditions of the Master Agreement for Cooperative Projects between the State of New Hampshire and the University System of New Hampshire, dated November 13, 2002, except as may be modified herein.
- B. This Project Agreement and all obligations of the parties hereunder shall become effective on the date the Governor and Executive Council of the State of New Hampshire approve this Project Agreement ("Effective date") and shall end on **9/29/27**. If the provision of services by Campus precedes the Effective date, all services performed by Campus shall be performed at the sole risk of Campus and in the event that this Project Agreement does not become effective, State shall be under no obligation to pay Campus for costs incurred or services performed; however, if this Project Agreement becomes effective, all costs incurred prior to the Effective date that would otherwise be allowable shall be paid under the terms of this Project Agreement.
- C. The work to be performed under the terms of this Project Agreement is described in the proposal identified below and attached to this document as Exhibit A, the content of which is incorporated herein as a part of this Project Agreement.

**Project Title: State-wide survey for blueberry leaf rust, caused by Thekopsora minimum, an emerging disease in New Hampshire (2024 SCBG Project #2)**

- D. The Following Individuals are designated as Project Administrators. These Project Administrators shall be responsible for the business aspects of this Project Agreement and all invoices, payments, project amendments and related correspondence shall be directed to the individuals so designated.

**State Project Administrator**

Name: Rebecca Ross  
Address: NH Dept. of Agriculture, Markets, and Food  
1 Granite Place  
Suite 211  
Concord, NH 03301  
Phone: 603-271-8071

**Campus Project Administrator**

Name: Gretchen Swain  
Address: Sponsored Programs Administration  
51 College Rd  
Durham, NH 03824  
Phone: 603-862-4865

- E. The Following Individuals are designated as Project Directors. These Project Directors shall be responsible for the technical leadership and conduct of the project. All progress reports, completion reports and related correspondence shall be directed to the individuals so designated.

**State Project Director**

Name: Rebecca Ross  
Address: NH Dept. of Agriculture, Markets, and Food  
1 Granite Place  
Suite 211  
Concord, NH 03301  
Phone: 603-271-8071

**Campus Project Director**

Name: Bo Liu  
Address: University of NH  
34 Sage Way  
Durham, NH 03824  
Phone: 603-862-0051

F. Total State funds in the amount of \$35,817.94 have been allotted and are available for payment of allowable costs incurred under this Project Agreement. State will not reimburse Campus for costs exceeding the amount specified in this paragraph.

Check if applicable

Campus will cost-share \_\_\_\_\_ % of total costs during the term of this Project Agreement.

Federal funds paid to Campus under this Project Agreement are from Grant/Contract/Cooperative Agreement No. **USDA-AMS-24SCBPNH1252-00** from **AMS/USDA** under **CFDA#10.170**. Federal regulations required to be passed through to Campus as part of this Project Agreement, and in accordance with the Master Agreement for Cooperative Projects between the State of New Hampshire and the University System of New Hampshire dated November 13, 2002, are attached to this document as Exhibit B, the content of which is incorporated herein as a part of this Project Agreement.

G. Check if applicable

Article(s) \_\_\_\_\_ of the Master Agreement for Cooperative Projects between the State of New Hampshire and the University System of New Hampshire dated November 13, 2002 is/are hereby amended to read:  
No indirect costs allowed.

H.  State has chosen **not to take** possession of equipment purchased under this Project Agreement.  
 State has chosen **to take** possession of equipment purchased under this Project Agreement and will issue instructions for the disposition of such equipment within 90 days of the Project Agreement's end-date. Any expenses incurred by Campus in carrying out State's requested disposition will be fully reimbursed by State.

This Project Agreement and the Master Agreement constitute the entire agreement between State and Campus regarding this Cooperative Project, and supersede and replace any previously existing arrangements, oral or written; all changes herein must be made by written amendment and executed for the parties by their authorized officials.

IN WITNESS WHEREOF, the University System of New Hampshire, acting through the **University of New Hampshire** and the State of New Hampshire, **Department of Agriculture, Markets, and Food** have executed this Project Agreement.

**By An Authorized Official of:  
University of New Hampshire**

Name: Dianne Hall  
Title: Manager, Pre-Award Compliance  
Signature and Date: Dianne Hall Digitally signed by Dianne Hall  
Date: 2025.08.26 13:24:01  
-0400

**By An Authorized Official of: the New  
Hampshire Office of the Attorney General**

Name: Louise Williams  
Title: Assistant Attorney General  
Signature and Date: Louise Williams July 10, 2025

**By An Authorized Official of:  
NH Dept. of Agriculture, Markets, and  
Food**

Name: Shawn N. Jasper  
Title: Commissioner  
Signature and Date: Shawn N. Jasper 7/2/25

**By An Authorized Official of: the New  
Hampshire Governor & Executive Council**

Name:  
Title:  
Signature and Date:

## EXHIBIT A

- A. Project Title:** State-wide survey for blueberry leaf rust, caused by *Thekopsora minimum*, an emerging disease in New Hampshire (2024 SCBG Project #2)
- B. Project Period:** 1/3/25 - 9/29/27
- C. Objectives:** University of New Hampshire will develop an integrated disease management system to blueberry leaf rust based on state-wide survey and disseminating results to stakeholders through grower meetings and field days.
- D. Scope of Work:** Blueberries are an economically important fruit crop in New Hampshire. Blueberry leaf rust, caused by the fungus *Thekopsora minimum*, is an emerging disease in the US. In the summer and fall of 2023, blueberry leaf rust was found widely spread in New Hampshire. Leaf rust destroys blueberry leaves, reducing photosynthesis, which is necessary for plant growth and development, and causes severe premature defoliation of the affected bushes. The disease could affect winter hardiness of the canes, and have a direct impact on yield and reduction in flower bud development for the following year.

Leaf rust pathogen has a wide host range including *Vaccinium* spp. (blueberry, cranberry, huckleberry), *Tsuga* (hemlock, spruce (spruce is genus *Picea*), and *Rhododendron* (azalea, rhododendron).

Until now, little is known about the disease here. Therefore, a two-year systematic disease survey across the state is vital to understand disease severity, the pathogen biology, ecology and epidemiology, and disease management including using resistant varieties. The best approach to manage leaf rust is planting resistant/tolerant varieties. This survey is a vital first step in screening varieties in greenhouse and field conditions. Another crucial step is to develop and standardize the protocol for evaluating blueberry varieties for resistance. Taken together, the results generated from this research will help blueberry growers in NH to make informed decisions in the management of this emerging disease.

The scope of this project shall be construed consistent with the Project Plan as approved by USDA, AMS which hereby incorporated by reference including compliance with all federal requirements as indicated in Project Plan #3.

### Project Objectives:

- Objective 1:** Conduct a state-wide survey, to monitor disease severity and progress, including monitor commercial varieties reacting to leaf rust, to understand the correlation between weather and levels of disease and the correlation of the distance between nearest hemlocks and blueberry fields.
- Objective 2:** Molecularly characterize the pathogen populations and compare them with the ones from neighboring and Southern States.
- Objective 3:** Develop and standardize the protocol for evaluating the resistant varieties to leaf rust.
- Objective 4:** Disseminate results to stakeholders through grower meetings and field days.

### Stakeholders

Blueberry producers in New Hampshire primarily market their berries through pick-your-own operations and retail markets such as farm stands and farmers markets. Producing a reliable crop each year is vital to the long-term sustainability of their businesses. If blueberry leaf rust becomes a regular disease issue requiring management each year due to suitable climate conditions, growers, extension

Authorized  
Official:  
DH  
Date:  
6/25/25

educators and researchers will need to better understand how and when to best manage this disease. If left unmanaged and reoccurring for multiple years in a row, severe plant decline could occur, jeopardizing the long-term sustainability of these businesses in New Hampshire.

## EXPECTED MEASURABLE OUTCOMES

Outcome 4: IMPROVE PEST AND DISEASE CONTROL PROCESSES. Indicators:

4.1 Number of stakeholders that gained knowledge about science-based tools to combat pests and diseases: 50; 4.2 Number of stakeholders that adopted pest and disease control best practices, technologies, or innovations: 50; 4.3 Number of stakeholders trained in early detection and rapid response practices to combat pests and diseases, and of those: 50 - 4.3a the number of additional acres managed using integrated pest management: 50; 4.4 Number of stakeholders that implemented new diagnostic systems, methods, or technologies for analyzing specialty crop pests and diseases: 50; 4.5 Total number of producers/processors that enhanced or maintained pest and disease control practices, and of those, the number that reported: 50 - 4.5a Reduction in product lost to pest and diseases: 50 - 4.5b Improved crop quality: 50 - 4.5c Reduction in labor costs: 50 - 4.5d Reduction in pesticide use: 50; 4.6 Number of producers/processors improving the efficiency of pest and disease control diagnostics and response testing, as reported by: 4.6a Improving speed: 50 - 4.6b Improving reliability: 50 - 4.6c Expanding capability: 50 - 4.6d Increasing testing (i.e. survey work for pests): 50

Outcome 6: EXPAND SPECIALTY CROP RESEARCH AND DEVELOPMENT. Indicators: 6.1 Number of research goals accomplished: 4; 6.2 For research conclusions, the number that - 6.2a Yielded findings that supported continued research: 2 - 6.2b Yielded findings that led to completion of study: 2 - 6.2c Yielded findings that allow for implementation of new practice, process or technology: 2; 6.3 Number of industry representatives and other stakeholders who engaged with research results: 100; 6.4 Total number of research outputs published to industry publications and/or academic journals, and for each published research output, the: 5 - 6.4a Number of views/reads of published research/data: 1,000 - 6.4b Number of citations counted: 10

Outcome 7. IMPROVE ENVIRONMENTAL SUSTAINABILITY OF SPECIALTY CROPS. Indicators: 7.1 Number of stakeholders that gained knowledge about environmental sustainability best practices, tools, or technologies: 50; 7.2 Number of stakeholders reported with an intent to adopt environmental sustainability best practices, tools, or technologies: 50; 7.3 Number of producers that adopted environmental best practices or tools: 50; 7.4 Number of new tools/technologies developed or enhanced to improve sustainability/ conservation or other environmental outcomes: 50

## DATA COLLECTION TO REPORT ON OUTCOMES AND INDICATORS.

Improve pest and disease control process: The survey will let us know the details of disease distribution in each county, which varieties are resistant to leaf rust, and what is the distance between blueberry field and nearest hemlock for pathogen spreading. Based on the survey, we will write extension newsletters and post them on the UNH extension website, disseminate the information to growers through workshops and growers' meetings. The survey data will improve disease control and allow blueberry growers to adopt early detection practice, reduce yield loss and gain knowledge about science-based information to manage this emerging disease.

Expand specialty crop research and development: Developing the inoculation method will lead to large-scale screening for blueberry varieties, and more resistant varieties will be found, and growers will have more alternatives in choosing resistant varieties to combat leaf rust infection. One extension and one academic publication will be published on the UNH webpage and Plant Disease, respectively. Three conference articles will be presented at the annual APS meetings. The expected view and read for these articles will be around 1000, and citation will be 10 within 2 to 3 years.

Authorized Official: DH  
Date: 6/25/25

Improve environmental sustainability of specialty crops: The resistant varieties found from the survey will be recommended to blueberry growers, since more resistant varieties grow, less blueberry rust will be occurred, and less fungicides will be used, and consequently environmental sustainability of specialty crops will be improved significantly. Bo, Tyler, and Jeremy will conduct the survey, record disease severity for different blueberry varieties, and measure the distance between blueberry fields and nearest hemlock trees in each farm. Bo, Jeremy, and Becky will write extension newsletters and peer-reviewed articles, and disseminate the knowledge to growers through workshops and growers' meetings. For each workshop and meeting, we will count how many people attended and get in-time feedback from growers.

All reporting and publication shall be in accordance with USDA requirements and are subject to change as directed by USDA - AMS. Acknowledgement of support shall be included as required in 2 C.F.R. section 415.2. The following acknowledgment of USDA funding must appear in all published materials or products, in any format (web sites, audiovisuals, etc.), that are substantially based upon or developed under an AMS award:

"Funding for [Project or Publication] was made possible by a grant/cooperative agreement from the U.S. Department of Agriculture (USDA) Agricultural Marketing Service. Its contents are solely the responsibility of the authors and do not necessarily represent the official views of the USDA."

**E. Deliverables Schedule:** 6 month and annual reports on project activity due in June and December of 2025, 2026 and 2027. Final printed and digital report due by December 31, 2027

**E. Budget and Invoicing Instructions:** Campus will submit invoices to State on regular Campus invoice forms no more frequently than monthly and no less frequently than quarterly. Invoices will be based on actual project expenses incurred during the invoicing period, and shall show current and cumulative expenses by major cost categories as shown below. State will pay Campus within 30 days of receipt of each invoice. Campus will submit its final invoice not later than 60 days after the Project Period end date.

Budget Items	State Funding
1. Salaries & Wages	\$5,000.00
2. Fringe Benefits	\$0.00
3. Travel	\$14,317.44
4. Supplies and Services	\$16,500.50
5. Equipment	\$0.00
6. Indirect Costs	\$0.00
Total	\$35,817.94

## EXHIBIT B

This Project Agreement is funded under a Grant/Contract/Cooperative Agreement to State from the Federal sponsor specified in Project Agreement article F. All applicable requirements, regulations, provisions, terms and conditions of this Federal Grant/Contract/Cooperative Agreement are hereby adopted in full force and effect to the relationship between State and Campus, except that wherever such requirements, regulations, provisions and terms and conditions differ for INSTITUTIONS OF HIGHER EDUCATION, the appropriate requirements should be substituted (e.g., OMB Circulars A-21 and A-110, rather than OMB Circulars A-87 and A-102). References to Contractor or Recipient in the Federal language will be taken to mean Campus; references to the Government or Federal Awarding Agency will be taken to mean Government/Federal Awarding Agency or State or both, as appropriate.

Special Federal provisions are listed here:  None or **No indirect costs allowed.**

Authorized Official: DH  
Date: 6/25/25